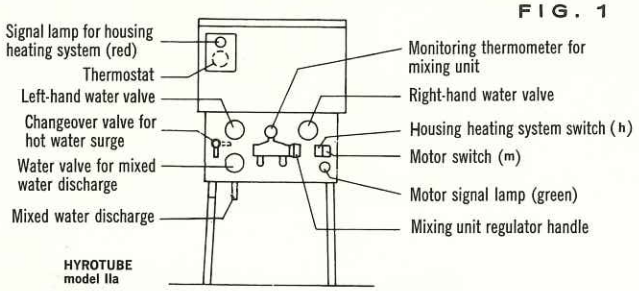
HYROTUBE

the UNIVERSAL film and Paper PROCESSOR

VERSATILITY • SIMPLICITY • CONSISTENCY

HYROTUBE

FIG. 1


Signal lamp for housing heating system (red)
Thermostat
Left-hand water valve
Changeover valve for hot water surge
Water valve for mixed water discharge
Mixed water discharge
Monitoring thermometer for mixing unit
Right-hand water valve
Housing heating system switch (h)
Motor switch (m)
Motor signal lamp (green)
Mixing unit regulator handle
HYROTUBE model IIa

This compact universal processor is designed to handle all processing methods — and insure complete uniformity of results. It requires minimal space, operates throughout its processing sequence in daylight, is characterized by simplicity in operation, installation and maintenance.

Diagram 1. outlines the complete HYROTUBE unit with its component features.

Diagram 2. shows the three basic parts of HYROTUBE — Cover, Developing Chamber and Base.

Diagram 3. shows how Developing Chamber is mounted on base so it can be tipped to drain off solutions and wash waters.

FIG. 2

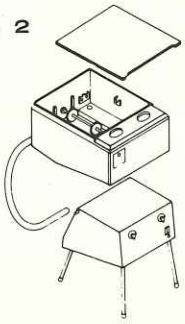


FIG. 3

HYROTUBE in the tipped position

The basic unit of the HYROTUBE is a light-tight developing chamber (Figure 4), clad both internally and externally with acid-resisting plastic. It contains a series of rollers which are driven by an electric motor. This chamber can be tilted on its base. It is connected by two hoses to the water inlet and outlet pipes. A built-in thermostatically controlled heating system insures correct constant temperature of solutions during operation in the HYROTUBE. At the front of the chamber you will note the two Inlet Funnels which are used for introducing the processing solutions into the developing tubes. The valve for washing is located in the base. The wash water passes through the Inlet Funnels into the developing tubes, washing the sensitive materials and cleaning the entire circulating system.

FIG. 4

Developing tubes are made of plexiglas (Figure 5. — large sheet film processing tube) or plastic (Figure 6. — light-tight seal tube for 35 mm and 120 rollfilm processing). Tubes are available for negative, positive or reversal processing in the usual sizes; they can also be supplied in various sizes for selection to suit the desired capacity. Two tubes can be accommodated simultaneously in the chamber (as shown in Figure 4).

FIG. 5

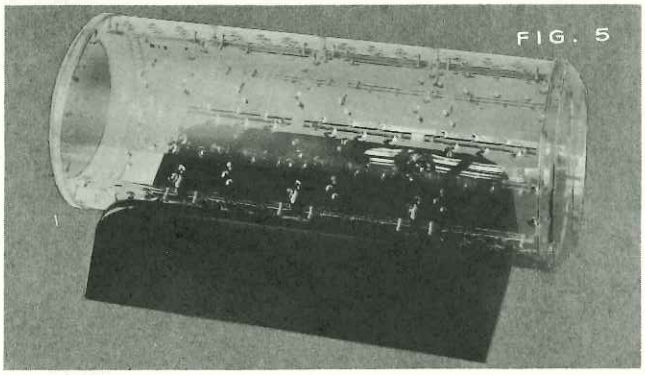
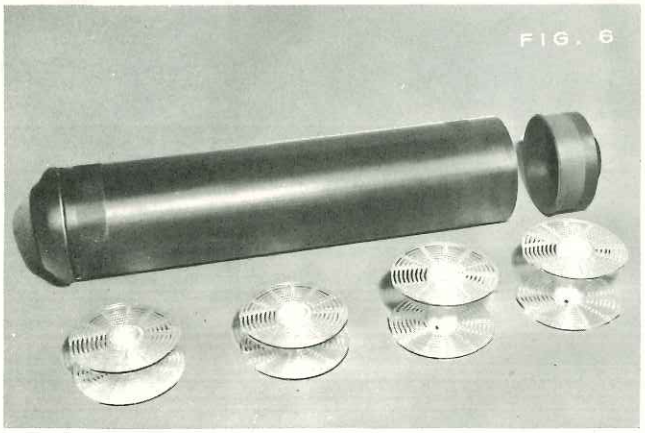


FIG. 6



TECHNICAL DATA

Depth — 31 in. Height — 42 in.
Width — 24 in. Space required — 7.49 sq. ft.
Mains connection — 110/115 volt 60 cycle

CAPACITY PER PROCESSING SEQUENCE

35 mm films:		20 films
Rollfilms:		24 films
Sheet films:	4″ x 5″	32 films
	5″ x 7″	24 films
	8″ x 10″	12 films
	20″ x 24″	2 films
Prints:	3½″ x 3½″	80 prints
	4″ x 5″	32 prints
	5″ x 7″	24 prints
	8″ x 10″	12 prints
	11″ x 14″	4 prints
	20″ x 24″	2 prints

The technique for working with the HYROTUBE is remarkably simple. The material to be processed is inserted in the appropriate developing tubes in the dark (no clips required), and the tubes are then placed horizontally on the rollers in the developing chamber (as shown in Figure 7).

Cover of HYROTUBE is then closed and the remainder of the processing sequence can be accomplished in *daylight.*

As soon as the electric motor is switched on, the tubes begin to rotate and are ready immediately for the admission of the processing solutions. These solutions have been prepared in advance, according to specifications, and are poured into the rotating tubes through the built-in Inlet Funnels at the front of the top surface of the HYROTUBE (procedure illustrated in Figure 8).

On completion of the processing time for this step, wash valve is opened and the developing chamber is tipped slowly back (and allowed to remain tipped for a few seconds) to drain solution from the developing tubes (as shown in Figure 9).

The wash water will provide a thorough washing of the sensitive materials and a complete rinsing of the entire circulating system (funnels, pipes and tubes). After washing is completed, wash valve is closed and residual water drained off by again tipping chamber back briefly.

Chamber is restored to starting position and the next processing solution is introduced through the Inlet Funnels. Processing and washing operations proceed as before. (This procedure is repeated until all requirements of the process are met).

When the entire processing sequence has been completed, cover of the chamber is opened, tubes are taken out and the sensitive materials removed for drying.

FIG. 7

FIG. 8

FIG. 9

HYROTUBE HIGHLIGHTS

UNIVERSAL APPLICATION for almost all processing methods and all sizes up to 20″ x 24″.

NO CONVERSION DELAYS since the processing cycle can be varied at any time.

NO WORN-OUT SOLUTION PROBLEMS since the chemicals are used only once.

UNIFORM AND FAULTLESS PROCESSING without elaborate accessories.

THOROUGH WASHING by continuous water flow and simultaneous agitation of the sensitive material.

VARIABLE CAPACITY permits easy modification of the unit to suit the volume of work at hand.

VERY MODEST SPACE REQUIREMENT — only 7½ sq. ft.

HIGH CAPACITY per processing cycle by using two tubes.

NO CONTACT WITH CHEMICALS — permitting clean working and protection for both operator and materials.

GREAT SAVINGS IN WORKING TIME — since the unit is operated in full light throughout the entire processing sequence, permitting other work to be performed. (HYROTUBE requires no operation or attention beyond pouring in and emptying out of solutions).

Q A

QUESTIONS
ANSWERS

Q. What is the purpose of the HYROTUBE?

A. To fill the definite need for a well-designed, trouble-free processor which insures consistent high quality control economically in the processing of Color sensitized photographic materials as well as Black & White (in either film or paper). HYROTUBE is designed to fit into operations found in the Graphic Arts, Industrial, Commercial and Professional Photographic fields.

Q. What is the main advantage of the HYROTUBE over other processors?

A. Apart from its versatility, the highest uniformity of processing is assured. Fresh developer and fresh solutions are used for each processing cycle.

Q. Because of this, will chemical consumption be high?

A. On the average, chemical consumption will not be higher than for tank processing, and there are no replenishment expenses or problems.

Q. What are the difficulties in tank and tray processing?

A. The biggest problem results from the chemical reaction of the developer (especially in color work). Once it is used, its stability is considerably lowered — compared with fresh developer. Used developer cannot show uniform results because its reaction is continually changing.

Q. What types of processing can be accomplished by the HYROTUBE?

A. Color or Black & White — Film or Paper — Negative — Positive — Reversal.

Q. How are sensitized materials processed in the HYROTUBE?

A. They are placed in the developing tubes (which are available in various sizes — up to 20" x 24" — to fit the dimensions of material to be processed).

Q. Is this really a daylight machine as claimed?

A. YES. Films and papers are inserted in darkness — but during processing, the room light can be switched on and the operator can carry out other work.

Q. Is the HYROTUBE temperature controlled?

A. YES. Temperature is controlled as needed by the built-in thermostat.

Q. Is wash water controlled in the HYROTUBE?

A. YES. The automatic mixing valve controls the temperature of the water.

Q. Is nitrogen burst necessary to prevent uneven development?

A. NO. The revolving of the tubes, first in one direction then in the other (every 8 seconds) thoroughly mixes the solution — eliminating any danger of streaks, and insuring perfect uniform density.

Q. How great is the water consumption of the HYROTUBE?

A. Approximately ¼ gallon per processing tube per minute under normal water pressure.

Q. What is the consumption of electricity?

A. Motor — 60 W. — Heating Element — 250 W.

Q. Is it practical from an economic standpoint to own more than one HYROTUBE?

A. ABSOLUTELY! Many plants have multiple HYROTUBES. The number needed is the governing factor. The compact size of the unit coupled with the reasonable cost encourages the use of more than one HYROTUBE.

HYROTUBE

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